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ABSTRACT

In October of 1985, the Office of Educational Research and Improvement (OERI) awarded contracts to 29 universities and one regional education center to conduct three-year efforts aimed at research-based improvement of teacher education. All have university-school collaboration as a major theme, and will spend up to one year in development of improvements and then must spend at least two years in demonstrating these improvements and assessing their impact. An analysis of the strengths and weaknesses of the 30 funded proposals and common characteristics of those not funded are presented. This analysis looks at the types of changes proposed, the nature and appropriateness of the research cited to support changes, the variety of approaches proposed for collaborative planning and development, and the range of outcomes envisioned and how those outcomes will be assessed. The paper also contains an analysis of how various aspects of the proposals appear to be consistent with, or contrary to, existing research knowledge and practical wisdom. Also addressed are the possible implications of the proposed work for bringing about significant improvement in teacher education. The paper concludes with a section on the most salient messages coming from the set of proposals. (JD)

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USING RESEARCH KNOWLEDGE TO IMPROVE TEACHER EDUCATION: AN EXAMINATION OF DEVELOPMENT-DEMONSTRATION PROPOSALS TO OERI

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Using Research Knowledge to Improve Teacher Education: An Examination of Development-Demonstration Proposals to the OERI

Introduction

In October of 1985, the Office of Educational Research and Improvement (OERI) of the U. S. Department of Education awarded contracts to 29 universities and 1 regional education service center to conduct three-year efforts aimed at research-based improvement of teacher education programs. These 30 sites, all of which have university-school collaboration as a major theme, will spend up to one year in development of the specific improvements which they will make and then must spend at least two years in demonstrating these improvements and assessing their impact. The lessons learned from these change efforts will be of value not only to the sites but to the approximately 1200 other teacher education programs nationally, many of which are facing major decisions about the nature of their programs and, in some cases, their very existence.

This paper is an analysis of the proposals which were received by the OERI in this competition. Although it is principally an analysis of the strengths and weaknesses of the 30 proposals which were funded, it also addresses, for purposes of comparison, some of the common characteristics of those proposals which were not funded. This analysis looks at the types of changes proposed, the nature and appropriateness of the research cited to support these changes, the variety of approaches proposed for collaborative planning and development and the range of outcomes which are envisioned and how those outcomes will be assessed. While reporting factual information on what was proposed by

offerors, the paper also contains my analysis of how various aspects of the proposals appear to be consistent with or contrary to existing research knowledge and practical wisdom. Under each section, I also address the possible implications of the proposed work for bringing about significant improvement in teacher education and conclude with a section on what seem to be the most salient messages coming from this set of proposals.

This is the first of several papers which will describe and analyze the nature, progress and influence of these projects. It is basically a content analysis of what was proposed and needs to be considered as such. At the end of the first six months of the projects, progress reports will detail how reality has tempered the missions or altered the plans and perhaps even be more revealing than the proposals in considering the potential and limitations of these change attempts. The intent here is to provide an overview of what some of those who are promoting change believe to be the most important issues to be addressed and their notions of the best ways to address them. Furthermore, one of the papers in this series is being prepared for a more quantitative and detailed presentation of the data from the proposals and will include a comprehensive analysis and bibliography of specific research cited across the proposals. The paper you are now reading is intended as a qualitative overview and quantifies only to illustrate the magnitude of elements being discussed.

General Requirements of the Competition

These 30 projects are not intended to be research efforts but, rather, efforts that will use research results as one basis for bringing about improved teacher education. All are required to have university-school collaboration in the design, implementation and evaluation of their efforts and all must involve interdepartmental activity at the Institution of Higher Education (IHE). Each is funded for $25-33,000 per year for the three years. Offerors were requested to allocate approximately 75% of their resources to improving preservice teacher education and could allocate up to 25% to beginning teacher and/or inservice teacher education. All were required to be "of sufficient size, scope and quality to affect a variety of participants, and promise significant improvement in the content, processes and outcomes of the preparation program", as well as to be innovative and "risk-taking" in their plans. No restrictions were placed on the subjects or grade levels to be targetted nor on the specific research results which could be used, although four general and rather inclusive areas of research from which to draw were outlined. Analysis of the local context (needs, resources and conditions) was required in the proposal. These needs and an analysis of relevant research were to serve in the proposal as the basis for choosing desired changes and approaches.

All projects are to document the processes and outcomes of the entire three years and have agreed to work with a separate support contractor whose prime responsibility is the synthesis, analysis and dissemination of information across projects so that educational practitioners and policymakers may benefit from the lessons learned. The support contractor is also to provide networking across projects with similar

interests and will aid the projects in planning their documentation and assessment activities. In the summer of 1986, each of the projects will submit an implementation plan describing demonstration activities for years 2 and 3. If these plans are reviewed as acceptable, assuming availability of federal funds, awards will be made for the demonstration phase.

The Projects

Thirty projects in 21 states and the District of Columbia were funded. Twenty of these are "new faces" in receiving OERI (formerly the National Institute of Education) support. There are projects in all regions of the country from Alaska to Mississippi and from Washington State to New Hampshire, with a concentration of projects in the North Central, Midwest, and Mid-South regions. Many are working collaboratively with state departments of education, teacher organizations, intermediate service agencies, other IHEs, and/or OERI-sponsored labs and centers in addition to the required university/school collaboration.

Fifteen projects are addressing both elementary and secondary teacher education, 9 are addressing secondary only and 6 are focussed on elementary or early childhood only. Eleven projects are focussed on specific content areas, with 7 in science and/or math and others in English, social studies, and foreign languages. At least 8 are using educational technology techniques (e.g. interactive video discs) in major and creative ways as a part of the teacher education effort. Six projects are directed at developing alternative certification programs for non-education majors and these programs range from 16 weeks to 2 years in duration. Eight sites are examining the induction/beginning

teaching phase as their primary emphasis, particularly as it can be used for feedback in improving the preservice experience.

Given these overviews of the nature of the competition and the general distribution and nature of the contracts awarded, let's move to a closer look at several cross-cutting features.

Types of Changes Proposed

Somewhat surprisingly, about 25% of the projects claim to be interested in changing their entire teacher education programs as a result of this project and related efforts. Among these projects, most acknowledged that pressures external and internal to their programs were being brought to bear under the current national reforms initiatives in education, particularly from the state level. Several tied their self-evaluation efforts directly to whether or not the new programs would aid in complying with new state performance-based certification requirements. Of the "total change" group, virtually all had already begun major change efforts and saw this project as a way to complement those efforts, give more focus to them, and/or provide some national visability and credibility that the institution was viewed positively in terms of its potential for improvement. While one can applaud the willingness for change on such a grand scale, peer reviewers and OERI staff were often somewhat skeptical of the projects' capability for massive change given the time frame and the resources available. The issue of how much change can be undertaken was hotly debated in reviews and generally treated on an individual basis with offerors, often dependent on how much outside resources were available to support the project. In a related matter, it is important to note that in at least

20% of the projects, institutional cost-sharing (usually from the IHE but also from LEAs and state departments of education) exceeded the amount received from the OERI. While one might ideally like to see that figure higher than 20%, experience tells us that cost-sharing to this extent is rare, especially when it was only requested and not required in the competition.

More frequent than attempts at total change were efforts to focus on one or two elements of a program as a starting point, with plans for expansion to other areas at a later date. By far the most "popular" area for change was in the clinical components of the program. While some focused on pre-student teaching lab and/or field experiences, others on student teaching and still others on clinical support for beginning teachers, 75% of the projects will address clinical aspects of teacher education in some major fashion and all but a few have it included in some ways. Student teaching was the most frequently cited clinical area of need. There was concern expressed in many efforts for the content of the clinical experiences but it is probably accurate to say that the primary focus was on the quantity and processes of those experiences. Often, offerors would cite several substantive thrusts which they wished to include as central parts of clinical experiences (e.g. research knowledge on instructional practice or classroom management) but would then treat the substance lightly while using most of the narrative to describe such processes as the need for more classroom and school contact time for teacher education students, the need to better train cooperating teachers, and the need to make collaborative decisions among participants as to how the clinical

interactions could be most productive. Offerors would cite relevant literature in their research reviews that could have led them to more definitive ideas about what would comprise the content of such experiences but relatively few chose to do so. However, those that did focus on content as well as processes (perhaps 25% of the projects emphasizing clinical concerns) generally did an exceptionally good job of defining appropriate, important and relatively sophisticated content such as assessing and understanding student (and teacher) cognitive and personal growth, considering contextual effects on teaching and learning, and understanding teacher expectations.

Another heartening trend was that about one-third of the total projects are focusing on the importance of problem-solving, creative thinking and reflective inquiry as a cornerstone of developing teachers as professionals capable of making expert judgments in their classrooms and schools. There is an awareness that this dimension of teaching has been overlooked and inadequately modelled and supported and it is clear that offerors are trying to find ways to establish norms of inquiry in their classroom and clinical experiences for teacher education students. On the down side, only a few offerors have paid a great deal of attention to working with school collaborators on how the school workplace will continue to support such inquiry once students become full-time teachers. One hopes that this crucial issue will be a major focus of the developmental planning process but it was inadequately treated in most proposals. If norms supporting inquiry in the workplace are not established and nurtured, then preservice teacher education may well serve to heighten the frustration of its students by preparing them for a world that will not be realized. Since we know that the

non-supportive "systems" usually stifle and devour creative and enthusiastic newcomers, no matter how well intentioned and oriented toward change they are, unless we work on parallel lines to change that system we are probably going to continue to fail to recruit and retain the most able in teaching.

The issue of how to collaborate effectively got a lot of attention in proposals. While the vast majority of offerors already had some type of collaborative mechanisms in place to interact with local education agencies (LEA), the quantity and significance of these seemed very uneven. Most saw this project as a way to strengthen these ties and were very concerned with getting the appropriate number and mix of cross-institutional representation. But it also seemed that many offerors were willing to collaborate on ideas and information-sharing but less so on decision-making. Too frequently the final decisions on changes and processes seemed securely in the realm of the IHE. While it is a positive sign that the IHEs are perhaps now more aware of the contributions that LEA personnel can make to the development and implementation of improved teacher education, it is hard to envision a true collaborative partnership until there is a sharing of power as well as involvement. It is this lack of shared decision-making that has already alienated many LEAs from IHEs and sometimes caused the LEAs to develop their own professional development efforts out of frustration with a perceived lack of responsiveness from the IHEs. Although a small number of offerors developed creative and very real shared decision-making mechanisms, this is one of the general areas in need of improvement. To their credit, several proposals included plans to give

LEA faculty adjunct and voting status at the IHE and some included plans for IHE/LEA team teaching arrangements but these tended to be the exception, not the rule. Given the general current tone of school-university relations, it would not be surprising if the developmental year provides IHEs with some new perspectives on this issue since proactive LEA collaborators may choose to highlight the shared power aspects as a condition of continued participation in the demonstration phase.

As alluded to earlier, many projects were concerned with enhancing the skills, knowledge, attitudes and behaviors (especially vis a vis supervision) of cooperative/mentor teachers and, in four cases, administrators in the schools. Frequently overlooked, however, was the parallel need for faculty development at the IHE. There were many proposals with ongoing seminars planned in which both IHE and LEA faculty would participate, but they frequently seemed to be focussed on LEA staff for development and on IHE staff for collaboration. This lack of attention to IHE faculty could undermine improvement efforts as it seems to represent a tacit assumption that only practitioners and policymakers at the LEA levels need more research and research-use orientation and skills.

Finally, the expected efforts to introduce new and/or revised courses and course sequences were at the heart of roughly half the proposals. In most cases, the inclusion of results from a specific research area (e.g. effective teaching) was to form the core of a course but there was also a hopeful trend in some projects toward some synthesis and

integration across research areas and a broadening of course conceptualizations. For example, team teaching of courses in an interdisciplinary fashion was planned to allow for coverage of both pedagogical and content issues and their interrelatedness. Frequently, proposals would target 2-4 courses considered most crucial to success for restructuring or articulation, planning to use these courses as vehicles for developing interest among the remainder of IHE instructors. While much attention was paid to how various research results could provide the content for specific courses, one could infer that many offerors see this as a rather linear process with analysis of the literature and some synthesis and ordering of information as the only prerequisites for deciding on appropriate content. While this may be possible for some of the more well defined research areas and educational issues (e.g. What comprises effective teaching practices in the acquisition of elementary-level basic reading and mathematics skills?), it is much less definitive in a host of other areas. There was relatively little consideration of differences in the research bases which are available to inform the content (and even more so for the processes) of courses and little discussion of how one goes about making "best judgments" which include the available research evidence but also necessitate expert opinion when the research base is not fully developed. Even in the case of "fully developed" research, there still must be room for adaptation and the earlier-mentioned informed professional judgment if we are to realize the important goal of the professionalization of teaching. There too frequently appeared to be an implied linear process of knowledge development, sharing, acquisition and use that does not acknowledge nor incorporate the essential theory

and practices of what some of our most enlightened current educators and researchers have come to call knowledge "transformation".

Now that we've opened the door and glanced at some of the issues bearing on the research base, let's step inside and take a better look.

Nature and Appropriateness of the Research

If one would judge the offerors collectively on the basis of the breadth of coverage on a wide variety of research findings, a relatively high rating would be given. It is probably equally accurate to report that the depth of coverage and the degree of appropriate integration of research results across related issues would not be so highly rated. For example, it is not surprising that by far the most frequently cited results were those drawn from the effective teaching research, centered on instructional practices and classroom management. Yet few cited the limitations of this work in terms of the grade levels, subjects and types of students from which it is drawn. Several proposals (particularly among those which were not funded) seemed to assume that effective practices derived from this research represented generic competencies which were equally appropriate across all grade levels and subjects and all types of students, a stance which I doubt any of the researchers who produced that work would take. On the other hand, those offerors who were concentrating on a particular subject area tended to do a reasonably good job of citing subject-specific research but paid relatively little attention to teaching issues which were common across subjects and settings. This undoubtedly emanates from the traditional

separation of subject matter expertise and pedogogy which typifies the teacher education-subject matter split at many IHEs and represents one of the biggest barriers to integration of important related work.

As mentioned earlier, offerors sometimes overtly and sometimes tacitly tended to represent a particular conceptualization of teaching and teachers which led them to pursue different types of research as a foundation for their efforts. Clearly, many institutions are concerned primarily with ensuring knowledge and skill acquisition as their project focus. Many of these efforts are responding to state mandates including testing for entry into and retention in teaching based on paper and pencil and classroom assessments of specified "competencies" drawn mainly from the effective teaching research. While recognizing the essentiality of acquiring this knowledge and skill, these proposals generally did not recognize the importance of acquiring effective teaching skills as a means to other ends rather than just as ends themselves. In several cases, too little attention was sometimes paid to what teachers would do with these acquisitions other than uniformly apply them in a relatively linear and prescriptive fashion to a rather undifferentiated variety of instructional settings.

As a contrast, a very different conceptualization of teaching was found in many other proposals. These offerors chose to portray teaching as problem-solving, requiring creative and reflective thinking skills and requiring teacher education to model such skills and inculcate individual and group norms befitting this conceptualization in teacher education students. The research bases for these proposals emphasized work on teacher planning and decision-making, understanding the cognitive development of school

students (and of teacher education students) as the basis for planning instruction, and on knowledge transformation and adaptation as opposed to strict adoption and rigidity. Several of the projects with these goals also called upon the adult development literature as a key factor in designing teacher education since such elements as conceptual, ego and moral development were seen as potentially related to a prospective or practicing teachers' capacity for handling the problem-solving tasks and value-laden choices of this conceptualization of teachers and teaching.

While the first of these approaches incorporates necessary elements of being an effective teacher, it is very difficult to defend its sufficiency. By the same token, the second approach could not succeed unless teacher education also provides the tools (e.g. effective teaching practices) with which one builds a repertoire of knowledge and skills to use in the problem-solving process. When one looks across relevant research, it is very apparent that each approach contains extremely important elements that can contribute to effective teacher education but that the problem-solving conceptualization calls for attention to a far greater variety of significant influences on teaching and learning than the knowledge and skills acquisition approach. The problem-solving approach places the teacher in the position of a professional educator, more a manager than a worker, entrusted with responsibilities to understand and resolve competing demands, adapt knowledge and theory to complex and varying conditions, and constantly monitor and revise practices when more effective and efficient alternatives are available. In order to do this, the teacher must

incorporate specific knowledge bases and exhibit instructional and management skills, but adds to that his/her informed professional judgment as a basis for planning and decision-making. It is this latter element which differentiates a "good" teacher from one who may be "effective" in certain situations but unable to comprehend and resolve problems within the overall teaching and learning context. Furthermore, by exhibiting this behavior in schools and classrooms, teachers serve as models for students who are then more likely to be both beneficiaries of and interested in this process of problem-solving and reflection as a norm for their learning. Projected is an image that minimal competence within a limited frame of reference is not as desirable, and perhaps not even acceptable, when compared with excellence in addressing the total teaching-learning picture. The adage that one has to crawl before one can walk may mean that improvements in teacher education programs will first reflect only the necessary conditions of knowledge and skill acquisition because many have not yet implemented programs which do that effectively. But the ever increasing diversity of students in schools, along with the knowledge explosion and its parallel demand on schools to provide those students with the capacity to understand and use that knowledge in ways that will benefit both the individual and society, leaves little doubt that if we are to remain a productive and equitable society, our teachers must be "good" and not just "effective." The coverage of the research base to support teaching and teachers in this pursuit must be comprehensive and deep but we must also realize that all the answers are not to be found in research.

Looking at other research that was cited as important content for teacher education curricula, there is also a growing but still not prevalent awareness that understanding of the school workplace is crucial to success in transforming knowledge and skills into action. Thus the literature on conditions of effective schools and their management and organization received a relatively high profile. While the importance of this research is unarguable, most proposals including it did so in terms of teaching about it and not so much in terms of how prospective and practicing teachers could play a role in bringing it about. Much of this literature is descriptive in nature, providing snapshots of what presently exists in effective schools and thus defining desireable outcomes. There are other growing research bases, less frequently cited in proposals, which examine how these outcomes are produced and what workplace norms and practices appear central to producing them. Alternatives to the traditional relative isolation of school personnel from key outside resources (IHEs, parents, etc,) can be found in research on collegiality, interactive research and development, parent-teacher interaction in support of instruction, and the like. Although this work received scattered mention in some proposals, it was generally overlooked in most proposals. Perhaps this is due to the perceived need to focus on only a small number of major and mutually agreed-upon desireable teacher education outcomes as targets for improvement, but it is important for those who design teacher education programs to recognize that knowing where you want to go is of little worth, and is even likely to increase frustration and anger, unless that knowledge is accompanied by knowledge of one or more ways to get there and how those alternatives routes can be explored and evaluated.

That brings us to the general issue of understanding "implementation" in education. Just as it is essential that individual teachers understand how to transform knowledge into appropriate instructional action, it is equally essential that those (including teachers) who determine the fate of educational institutions understand how to move from agreement on desireable outcomes to facilitative steps that are likely to produce faithful and feasible implementation of their conceptualizations. A wealth of research on implementation exists and can be extremely useful in determining individual and institutional readiness for change, in monitoring progress toward change, in assessing the extent of implementation that has been achieved, and in understanding why implementation was or was not realized. This literature is important because it provides both important content for teacher education and at the same time, alternative processes for teacher education and teachers to use in attempts at change and improvement.

Finally, it is also not surprising, given the previously mentioned high profile given to clinical teacher education in the proposals, that much research was cited in the area of student and beginning teaching, supervisory practices and teacher evaluation. However, as one might suspect considering the earlier remarks related to many proposals choosing a rather narrow definition of teaching effectiveness, the emphasis in looking at the literature on clinical practices was on technical dimensions such as how does one assess "basic competence" and how can university supervisors and/or cooperating teacher/mentors/master teachers support the acquisition of these basic competencies. In reality, most of the research on clinical teacher education, at least

until very recent years, has addressed only this limited conceptualization. However, we are fortunate to have research of recent vintage, largely descriptive and qualitative in nature, as well as initial theory development that at least raises many important questions. Intensive studies of supervisory interactions have indicated critical weaknesses in the process ranging from lack of understanding of its purposes (e.g. assist and/or assess; clinical supervision for what definition of "effectiveness"), poor role definition and/or understanding of role and status differences, and failure to include adequate consideration of the types and extent of influence brought to bear by contextual factors (e.g. modelling by the cooperating teacher, existing schools and classroom routines). As this research becomes more widely known and as the projects share information as a result of networking functions during the developmental year, the common high degree of concern over clinical experiences should lead to a great deal more attention to these recent important insights.

Approaches for Collaborative Planning and Development

Since collaboration among IHEs and LEAs was mandated and other types of collaboration encouraged, it is revealing to look at how offerors approached this process. While arguing against collaboration would seem like arguing against apple pie and mom, it is very clear that there are many different perspectives and practices with very different implications. A reminder is in order that all but one of the prime contractors is an IHE and that there has frequently been a tradition of adversarial relations and/or paternalistic treatment of LEAs by the IHEs that must be considered. As was mentioned earlier, power is not easily shared by those who are used to control. Therefore, while

all IHEs as prime contractors had to provide evidence of specific plans for collaboration in decision-making as well as in implementation of changes, most chose to say a lot more about the kinds of people to be involved and the processes for collaboration than they did about he substance of collaborative decision-making. One might assume that this was an attempt by the IHEs to obfuscate the issue and retain power and it is probably true that that is the case in some instances. Yet there are several realities which offer alternative interpretations.

First, other than establishing general guidelines and identifying key roles and/or specific persons for participation, true collaboration is something that by definition must be negotiated by all concerned parties. Since offerors received the announcement in May, at the end of the school and university years, and had only 4-5 weeks to respond, it is not difficult to believe that the more substantive issues could not be negotiated appropriately until during the developmental year, as many offerors explained. Second, despite the short time frame, virtually all the proposals had very strong letters of support from collaborators, whether LEAs, state departments of education, etc., and many had considerable dollar and/or in-kind services contributed by these collaborators. It is also true that a majority of the offerors documented long-standing relationships in teacher education with proposed collaborators, so historical precedent exists in many cases. Third, the issue of the event to which collaborators were actively involved in proposal development is less crucial than it might be when one considers that the development year is dominated by the need for intensive collaboration and the documentation of this process and

outcomes. The degree and significance of collaboration on key decisions regarding planning, implementing and evaluating the demonstration phases is a key criterion by which offerors will be judged in deciding whether or not they will receive the two years of demonstration funding. Fourth, and perhaps most relevant, even if IHEs wished to dominate the decision-making process, it is highly unlikely that the tenor of the times would allow it. It is difficult to imagine an LEA, knowing that it has leverage in that its full collaboration is needed in order for the prime contractor to receive funding, would bypass the opportunity to exercise its influence on processes and outcomes so important to the LEAs future. Finally, it is also important to point out that LEAs as well as IHEs are often not anxious to relinquish or share power that traditionally has been theirs. The two-way street of intensive and extensive collaboration has not been well travelled.

Perhaps even more traumatic than IHE-LEA collaboration to most of the offerors was the need for interdepartmental collaboration within the IHE and across disciplines. Such collaboration is clearly far more rare than instances of university-school interaction. Status differentials between teacher education programs and other disciplines almost always favor the other disciplines and incentives for collaboration may not be obvious for personnel outside teacher education. Unless support is forthcoming from the overall university hierarchy and specific department heads, commitment to teacher education by faculty from other disciplines is not likely to enhance their tenure and promotion opportunities. Finally, teacher education history is not replete with attempts to reach out to work with other disciplines despite the fact that roughly 2/3 of the teacher education students' college education will be in liberal arts and subject-matter coursework outside teacher education. While all proposals evidenced plans for interdepartmental

and interdisciplinary collaboration, the "feeling out" process of the developmental year will undoubtedly be far more revealing than what has been described on paper. In general, the planning and development activities with the various collaborators are faithful to an evolutionary process. Open-endedness in designs characterizes the vast majority of proposals and on-site LEA-based operations dominate most of the early thinking on the focus (if not the locus of control) for teacher education experiences. Site-based professional development schools, or at least classrooms, a hot topic in some of the most current cutting-edge literature, are found in one form or another in a surprising number of proposals. Perhaps one of the strongest incentives for a participative and receptive planning and development period is the unequivocal public and, for the most part, professional educator dissatisfaction with the current state of teacher education in the U.S. If there is an institutional equivalent to the notion that individual change is often forthcoming only when that individual reaches such a state of disequilibrium that he/she can no longer cope and survive, then surely many teacher education institutions must be rapidly approaching such disequilibrium and some LEAs are perhaps not far behind. The promise of an open and highly interactive planning and development process is reinforced by the realization that "We must all hang together or most assuredly we shall all hang separately."

Outcomes and Assessment

Perhaps one significant contributing factor to the lack of change and improvement in teacher education practices over the past century has been the lack of general public pressure on the scale of today's

concerns and a resultant lackadasical approach to gathering information on outcomes of teacher education. There is little doubt that the program and individual assessment tools used in teacher education are primitive in nature, and, with very few exceptions, have provided little data that was fed back into the teacher education institutions to guide revisions and improvements. Miniscule resources have been dedicated to this purpose. Despite recurring criticisms of teacher education by leading scholars of the past century, there simply was not enough general concern to generate even the identification of specific desirable outcomes within teacher education programs and, thus, no meaningful concern over how to assess outcomes.

Offerors were required to propose ways "to describe the effects of project activities in improving the procedures, course offerings, and structures of schools, colleges and departments of education (SCDE); in improving the productivity of relationships between SCDEs and local education agency personnel; and in enhancing the knowledge, skills, perceptions and practices of SCDE, IHE and school faculty and administrators." Since monetary and time restrictions and the embryonic state of the art with regard to tracking effects from teacher education through impact on school student learning miliated against experimental or even quasi-experimental designs to assess student achievement outcomes, data on the intermediate outcomes described above are being gathered. These data should serve as building blocks in developing understanding about how better outcome assessments could be designed to track through the ultimate concern of student learning in our teacher education graduates' classrooms.

While offerors preliminarily identified a range of specific outcomes which they felt were important to assess (e.g. acquisition of effective teaching knowledge and skills, problem-solving capabilities , improved supervisory practices), the issue of exactly how to define those outcomes operationally and how to feasible and fairly assess their presence or absence was another matter for further negotiation during the developmental period. Aided by the separate support contractor who will assist the 30 projects in, among other things, developing the documentation and analysis of their activities and outcomes, collaborators must mutually identify the outcomes most crucial to addressing their highest priority needs. Perhaps the most difficult tasks will be to define indicators of progress toward and achievement of desired outcomes and to design tools to assess presence or absence of indicators. While there are a variety of existing measures already in use in some domains such as minimal competency in effective teaching skills, there are fewer direct measures of progress toward such ends as problem-solving ability. A secondary contribution of this set of projects will be analysis of a collection of such assessment design attempts, with common elements suggested by the support contractor, of use in providing both data for analysis and preliminary instruments for refinement, consolidation, adaptation or perhaps even adoption in future work of a more sophisticated nature.

Messages from the Proposals

There can be little doubt that important research results are beginning to reach a wide range of teacher education audiences nationally. While the proposals received for this competition represent an obviously

biased sample of change-oriented teacher education institutions, they are representative of a wide range of geographic, political, economic and educational settings and conditions that reflect the problems and potential of teacher education in the U.S. The level of awareness of significant and relevant research and its relationship to experiential wisdom is being considered actively. It is probably fair to say that at least as many of the proposals are reactive in nature (e.g. to state mandates) as are proactive but the fact remains that they are all attempting to improve and they all have couched that improvement in knowledge bases that perhaps only a scant few years ago were virtually unknown to many of them. Although movement is not necessarily progress, it is necessary to progress and there is considerable evidence of movement.

Perhaps the most promising element of the group of proposals is the extent to which recognition of the need for a basic change in the conceptualization of teaching and teachers is evidenced. While a cadre of researchers and enlightened critics and proponents of teacher education have been espousing a problem-solving, reflective vision of teaching, one has not generally found that vision being conceptually and operationally pursued by practitioners and policymakers in teacher education. There is sufficient momentum apparent within these proposals, however, to pursue that vision and, as with most cases of change, it is essential that a few risk-takers subject themselves to the uncertainties of exactly how to define and achieve that vision if others are going to move on a broader scale in the same direction. There is a subset of proposals which are clearly representative of risk-takers,

just as there is a subset of proposals which are more conservative in their approaches, so it is likely that observers of these projects will have a variety of opportunities to examine the conditions and the successes and failures of varying degrees of changes. Even if one believes that drastic change in American teacher education is the only resolution to current problems, one also has to recognize that change takes place over time and is more likely to be lasting and comprehensive if the institution and individuals who must change are integrally involved in determining the nature of and processes for those changes. Given that there is great diversity in the types of institutions providing teacher education and in the resources and conceptualizations which support teacher education, we need a cross-section of wide ranging efforts to test some of our assumptions about who can do the job well and in what ways. As inquirers, we should be willing to entertain the possibility that just as we do not yet know whether our current visions of a professional teacher are feasible and appropriate, so too do we not yet know who can contribute in what ways to pursuit of the vision. The time is right for looking at what different types of institutions can do because all are faced with having to make changes, perhaps many as a matter of survival. To deny a variety of willing and accountable institutions to show what they can do with that opportunity would perhaps be at best debateable and at worst very shortsighted given the nascient state of the art of understanding how to educate teachers.

It is also clear from the proposals that there is still much work to be done in teacher education (both IHE and LEA-based) to increase the depth of knowledge of research and the ways in which related research results

need to be integrated to adequately and appropriately address key improvement issues. It is not just coincidental that researchers and those who sponsor research have not been very good at modelling integrative behavior across their own and other related research. It should be no surprise, therefore, that research users tend to compartmentalize knowledge much as research producers have done. One of the strongest messages coming from these proposals is the need to continuously push the projects to entertain ways by which more in-depth analyses of research within topical areas and across related areas can be ensured. That is, in fact, an essential aspect of first year development and one of the needs which the support contractor and the OERI will reinforce and support. It is interesting to note that activity among researchers parallels this need as we are now beginning to see more in-depth probing of such issues as how individual teachers acquire, organize and use knowledge, at the same time that analyses of teacher thinking are also examining how that thinking is influenced by an array of broader contextual factors such as school conditions and policies, roles and functions within schools and the accessability of the knowledge base. While it is easy to criticize teacher education for not having very sophisticated views of potential uses of research, responsibility for that must be shared by a research community which until very recently has not been known for much integrative leadership.

Rather than repeat many of the other messages which have been explicitly or implicitly stated in earlier parts of this paper, let me close with a comment on how these projects may fit into the larger issue of the future of teacher education in this country. Teacher education is on

trial. In many ways research which should be able to support high quality teacher education is also on trial. What teacher education practitioners and researchers working in related areas can do together over the next few years is quite likely to determine the structure and processes of teacher education for years to come, the willingness of the public and policymakers to provide resources in support of teacher education and research related to it, and perhaps even the survival or death of teacher education and teacher education research in any form remotely related to its present incarnation. Whether or not those eventualities will be good and wise is perhaps not as important to consider at this point in time as is the fact that drastic change is not only a possibility but an almost certain eventuality. If teacher educators and researchers do not combine forces to bring about positive and productive changes and show clear connections between these changes and important outcomes such as the likelihood of increased student learning, then the changes, including the possibility of termination of teacher education as a viable improvement initiative, will be regulated and mandated by those outside teacher education and perhaps without due consideration of the results of researchers' labors. Both teacher educators and researchers have much to lose if initiatives such as this one are not able to produce important and appropriate improvements. But both groups also have much to gain. While it is true that very minimal external resources are being provided in support of these change efforts, it is equally true that such is likely to continue to be the case unless and until teacher education shows that it knows how to use its human, knowledge and financial resources wisely to support productive efforts. Similarly, the part of the research community which

sees its work as relevant to the improvement of teaching and learning through the vehicle of teacher education is likely to receive little future support unless it can show the worth of its work in terms of influencing improvement. A mutual responsibility and accountability exists between teacher educators and researchers and these 30 projects represent an opportunity for realization of that mutuality in a highly productive fashion. Whether or not the opportunity will be grasped and capitalized upon remains to be seen.